Amendment to the Claims:

The listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-6.   Cancelled

7. (Currently Amended) A method for modeling fluid flows in a fractured multilayer porous medium to simulate interactions between pressure and flow rate variations in a well through the medium, comprising:

discretizing the fractured medium by a mesh pattern with fracture meshes centered on nodes at fracture intersections with each node being associated with a matrix volume; and

determining flows between each fracture mesh and the associated matrix volume in a pseudosteady state by using an image processing algorithm.

8   Cancelled without disclaimer or prejudice.

9. (Currently Amended) A method as claimed in claim 87, wherein:

each fractured layer is discretized in pixels and the matrix volume associated with each fracture mesh is defined by determining a distance from each pixel to a closest fracture mesh.

10. (Previously Presented) A method as claimed in claim 7, comprising:

determining at any point a transmissivity value for each pair of a fracture mesh and a matrix block by considering that pressure varies linearly depending on a distance from a point being considered to the fracture mesh associated with the matrix block.

11. Cancelled without disclaimer or prejudice.

12. (Previously Presented) A method as claimed in claim 9, comprising:

determining at any point a transmissivity value for each pair of a fracture mesh and a matrix block by considering that pressure varies linearly depending on a distance from a point being considered to the fracture mesh associated with the matrix block.

13. (New) A method as claimed in claim 10 comprising:

discretizing each fracture layer in pixels; and

determining a distance from each pixel to a closest fracture mesh; and wherein

the determining at any point is from the distance.

14. (New) A method as claimed in claim 10 comprising:

discretizing each fracture layer in pixels; and

determining a distance from each pixel to a closest fracture mesh; and

wherein

the determining at any point is from the distance.